REMARKS:

Claims 1, 2, 4 –11, 13 and 17-21 are pending and stand rejected.

It is believed that no new matter has been added by the amendments.

Response to the Examiner's comments of Applicant's previous Arguments

Applicant agrees with the Examiner that it is not necessary to calculate the number of examples having some of Applicants' s elements but not others – as none of the Nesvadba references includes Applicant's claimed Combination of elements. It is well established that not all embodiments of a disclosure must be exemplified. It is noted however that all examples in Nesvadba teach away from Applicant's claims – pointing away from obviousness. While all compositional elements are described in different lists in the Nesvadba reference, there is no teaching or suggestion to create Applicant's claimed composition – resulting in a gradient copolymer soluble in both water and organic solvent. This dual solubility is not recognized as result-effective in Nesvadba, and therefore cannot be optimized by routine experimentation. MPEP 2144.05. As discussed in Applicant's previous remarks, it is improper obviousness analysis to use Applicant's claims as a template to find separate elements in the cited art upon which to build, without some indication in the reference to make that combination.

Claim Objections

Claim 1 is objected to for the following formality: the phrase " said monomer units comprising a gradient copolymer". The Examiner believe such phrase is improper. Applicant disagrees – as the term "comprising" can be used either to list components of a copolymer, or to mean that the component makes up a part of the copolymer. However, for the Examiner, Applicant has removes the cited phrase, and instead added "gradient" before "copolymer" in line 10 of claim 1 – as a means of placing "gradient" within the body of the claim in addition to the preamble.

Claims 8 and 9 are objected to for the use of the phrase "preferably". Applicant has amended these claims to remove "preferably".

Claim 10 is objected to for reciting "particularly". Claim 10 has been amended to remove this term.

Specification.

The Specification is objected to for the diagram representation of the copolymer which the Examiner believes should have dark spheres that are missing on page 18, lines 15-22. Applicant has amended the specification to match that of priority document PCT/FR2003/003669 (WO 2004055071

35 U.S.C. §112

Claim 19 stands rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 is dependent from claim 3, which was cancelled. Claim 19 has been amended for proper dependency.

35 U.S.C. §§ 102 and103(a)

Claims 1, 2, 4-10, 13, and 17-20 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable as obvious over Nesvadba et al. (U.S. Patent 6,262,206). The Nesvada reference fails to teach or suggest all of Applicant's claim limitations, thus fails to provide a *prima facie* case of obviousness. Specifically, the Nesvadba reference fails to teach or suggest Applicant's specific COMBINATION of gradient copolymer, monomer % and Tgs; and where the copolymer is soluble or dispersible in both water and in organic solvents.

1. The Nesvadba reference teaches a gradient copolymer (Col. 12, lines 56-58) – though with no teaching or suggestion of how such a gradient polymer might be made. Each of the individual elements and limitations of Applicant's claims (except for dual water/organic solvent solubility) can be found buried among many other elements and limitations in the '206 reference. The structures listed include homopolymers, random copolymers, block, star and gradient copolymers (Col. 12, lines 56-58). The polymers can be made from a wide array of ethylenically unsaturated monomers, including some that would produce homopolymers with Tgs of both below and above 20°C.

Somme of the monomers are hydrophilic. The listed monomers also include comonomers of acrylic acid and methacrylic acid (Col. 7, lines 25 and 27), as well as maleic anhydride, itaconic acid and fumaric acid (Col 7, lines 36-38). Example B15 of the '206 reference even shows a block (not gradient) polymer of butyl acrylate and acrylic acid. However, Applicant's unique COMBINATION of claim elements and limitations is not taught or suggested by the '206 reference.

Every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by applicant. *In re Kotzab,* 55 U.S.P. Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted).

The main point of difference between Applicant's claims and the art is that Applicant's unique copolymer has both water and organic solvent solubility. This dual solubility was not known or expected from the art, and could certainly not have been predicted.

Applicant's invention relates to the field of amphiphilic gradient copolymers that are soluble in water as well as in organic solvents. (Specification, page 1, lines 13-15). Since the solubility of a copolymer in water and solvent was not recognized as a result to achieve in the '206 patent, the composition could not be optimized through routine experimentation to obtain such a result. The Examiner contends that the weight ratio of Components A and B is a result effective variable that can be optimized by one of skill in the art. Applicant disagrees. While the ratio of A to B can certainly be varied, there is no teaching or suggestion in the '206 reference to obtain a gradient copolymer with solubility in both water and organic solvents. Thus there is no motivation in the '206 patent to optimize the composition to obtain Applicant's results, and indeed Applicant's dual solubility copolymer could not be predicted from the cited art.

The Nesvadba reference teaches uses of polymers that could be either water-based or solvent based. The large list of monomers and ratios in Nesvadba could allow for the synthesis of a polymer or copolymer having solubility in either water or an organic solvent. There is no teaching or suggestion in the Nesvadba reference of a dual solubility copolymer, nor would one be expected from the Nesvadba teaching. Applicant's claimed copolymers

having dual solubility could not be predicted from Nesvadba, and have a performance not expected.

Matyjaszewski

Claims 1, 2, 4, 6-7, 18 and 20 stand rejected under 35 U.S.C. §103(a) as being anticipated by Matyjaszewski et al. J. Phys. Org. Chem. , 2000, 13, p. 775-786. The Matyjaszewski refrence fails to teach or suggest all of Applicant's claim elements, thus fails to provide a *prima facie* case of anticipation. Specifically, the Matyjaszewski reference fails to teach or suggest that the copolymer have both the claimed Tg and wt%, as well as one monomer being hydrophilic; nor that the resulting copolymer is soluble or dispersible in both water and organic solvent.

The Matyjaszewski reference does show gradient copolymers – including the styrene acrylonitrile example on page 783, Figure 3. However, neither styrene nor acrylonitrile is a hydrophilic monomer, thus fails to meet that claim element.

Further, the Matyjaszewski reference does not teach or suggest a copolymer that is soluble in both water and an organic solvent.

In view of the above, the Applicant believes that the reasons for rejection have been overcome, and the claims herein should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

Respectfully submitted;

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